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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/461,072	12/14/1999	SANDRO GREGORAT	SAMS01-00077	3301

23990	7590	12/07/2004

DOCKET CLERK
P.O. DRAWER 800889
DALLAS, TX 75380

EXAMINER
NGUYEN, CAM LINH T

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 12/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/461,072	GREGORAT, SANDRO
	Examiner	Art Unit
	CamLinh Nguyen	2161

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2 –8, 10 – 16, 18 – 24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 –8, 10 – 16, 18 – 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Prosecution is Hereby Reopened

1.   In view of the Board's Decision filed on 08/13/04, PROSECUTION IS HEREBY

REOPENED. In an update search of the prior art, a new reference was discovered that renders

obvious the claimed invention under 35 USC 103. Namely, an article by Eliezer Levy was found

that suggests that it is desirable to operate update controllers and bulk copy controllers

substantially concurrently. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following

two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37

CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a

supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or

other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

1.   Claims 2 –8, 10 – 16, 18 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Bauer et al (U.S. 5,926,816) in view of Levy et al article, " A Formal approach to Recovery

by Compensating Transactions", pages 95 – 106, 1990.

♦ As per claim 2, 10, and 18,

Bauer discloses a prior art approach to synchronize between a source data file (Fig. 1, element 10) and a copy data file (Fig. 1, element 20) comprising:

- " A bulk copy controller capable of copying a plurality of data records from said source data file to said copy data file" See column 1 line 35-40, col. 6, lines 15 – 24. Giving the claims their broadest reasonable meaning, it is evident that **client computers 20** of *Bauer* meet the Claim 2 limitation of **"bulk copy controller."** Like Appellant' claimed invention, *Bauer* discloses a system which achieves and maintains synchronization between source data file(s) and copy data file(s). In this system, comprising a server node and a plurality of client nodes, a plurality of databases maintains data through arbitrary modification operations. Each client node maintains a respective local replicated database, each of which is replicated from the central database. The client computer 20 can act as "copy controller" to copy data from the server to its node.

- " An update controller capable of detecting a change in a data record previously copied by said copy controller from said source data file to said copy data file (Col. 9, lines 45 – 49) and copying said changed data record from said source data file to said copy data file (Col. 9, lines 35 – 39), wherein said update controller and said bulk copy controller operate substantially concurrently" The database synchronizer determines which modification or changed occurred at the client (Col. 9, lines 45 – 49). This modification is in client side to detect modifications by comparing client data with before-image of the client data (see column 2 line 4-20). Both client and server side have their own synchronizer (see column 8 line 3-45) as evidenced by their ability to update at either

client or server side. If the modification occurs at the client side, then the client can use

one of many other methods for determining the modification. Hence, **the client**

computer or the server computer is an "**update controller,**" detecting changes and

propagating modifications of the client table to the server

Bauer does not clearly disclose the limitation of the server and client operating substantially

concurrently. However, referring to Figs. 6A and 6B, column 4, lines 40-55, column 11, line

23 to column 13, line 60, Bauer teaches that proper synchronization should be frequently

verified in the communication between client and server. Hence, it is clear that the claimed

provision is inherent.

On the other hand, Levy discloses a compensating transaction system that has some

special characteristics such as concurrently executing transactions in order to conform

consistency constraints (see Overview of Compensation, page 96). Levy teaches that a

concurrent execution of a set of transactions is represented as an interleaved sequence of read

and writes operations (see transaction Model, page 97).

It would have been obvious to one with ordinary skill in the art at the time the invention

was made to apply the teaching of Levy regarding concurrent execution operations into the

invention of Bauer because the combination would provide better consistency between data in

the databases. The modification to Bauer would have simply called for synchronizing the server

and client to run in parallel, that is substantially concurrently.

♦ As per claim 3, 11 and 19, the combination of Bauer and Levy disclose:

The databases are relational databases, which organize data in tables of row and columns

of data fields (see column 2, lines 25-40, and column 8, lines 7-10 of Bauer). In addition, the

server (Fig. 1, element 10, Bauer) maintains an update log (col. 8, lines 35 – 39) of all operations

on the server's replicated data since the time of last refresh for each client. For each row, there

will be a logged entries (see column 2, lines 60-67).

◆ As per claim 4, 12 and 20, the combination of Bauer and Levy disclose:

That catalogs on the client and server manifest table correspondences that list in a

common, indexed order all the columns of the replicated tables on that computer (see column 3,

lines 12-25).

◆ As per claim 5, 13 and 21, the combination of Bauer and Levy disclose:

That the server compares the server effective operation with the row as stored in the

server database and with timestamps stored in the update log for the purpose of minimizing the

amount of information communicated to the server by the client (see column 4, lines 15 – 39 of

Bauer). Since a replicated column on the server and a replica column on the client have the same

index value in the respective table correspondences, the indices are passed in the modification

message to identify columns having modified data (see column 3, lines 15-25 of Bauer). In other

words, in order to detect changes of data records, Bauer/Levy monitor the index values in the

table.

◆ As per claim 6 and 14, the combination of Bauer and Levy disclose:

That the modifications to the database are determined by the difference comparison

between the current value in the active table and the before values in the before-image table. The

active table is modified by the client and contains the current values of the data fields (see

column 3, lines 32-50).

◆ As per claim 7-8 and 15-16, the combination of Bauer and Levy disclose:

The computing system that has client side and server side applications that share the same data structures, but which do not maintain a continuous connection to a single share data source. The updates performed by either client or server is propagated to the other side when a connection is established (see column 1, lines 50-65 of Bauer). It is clear that the synchronizer is capable of determining that the client is online and is capable of activating the synchronizing operation based on the timestamp on the table in the logged entries.

◆ As per claim 22, the combination of Bauer and Levy disclose:

A method of using the before image change detection technique in the Bauer system to detect any operations on the data (see column 9, lines 45 – 65).

◆ As per claim 23 – 24, the combination of Bauer and Levy disclose:

"A database synchronizer in accordance with the invention manages replicated tabular data among a plurality of heterogeneous computers that are usually disconnected from each other", wherein the connections are made and individual clients are synchronized with the server. In this way, modifications made at one client are propagated to the server and eventually to each client as it connects (see the abstract).

Conclusion

3.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to CamLinh Nguyen whose telephone number is (571) 272 - 4024. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571) 272 - 4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
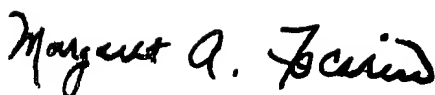
Information regarding the status of an application may be obtained from the Patent

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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